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(54) Title: CHARGED EMULSIONS FOR SITE-SPECIFIC DEPOSITION OF MATTER AT MICRO AND NANO SCALE

(57) Abstract: An emulsion including a continuous phase, a discontinuous phase which is immiscible in the continuous phase, and optionally a surfactant, the surfactant has a first part which is compatible with the continuous phase and a second part which is compatible with the discontinuous phase. The continuous phase has a high volume resistivity and the discontinuous phase is electrically charged. The discontinuous phase can be a reagent, a solvent which carries an active chemical reagent or a carrier liquid for a solid or insoluble liquid dispersed in the discontinuous phase. The surfactant, if present, is selected to not significantly reduce the volume resistivity of the continuous phase. The emulsion can also include a charge control agent. The emulsions can be used for the electrostatically controlled placement of matter in a spatially defined manner from the discontinuous phase for combinatorial chemistry and micrometer and nanometer scale deposition with or without reaction.